



What can hospitals do to reduce readmissions, prevent CMS penalties, loss of revenues and combat rising cost, waste and disengaged physicians?

A staggeringly high percentage (46%)

of US registered hospitals faced readmission penalties in 2018. This reduced Medicare reimbursement payments that CMS makes to affected hospitals between Oct. 1., 2017 and Sept. 30., 2018¹. This loss of revenue and wasteful readmissions can be avoided if hospitals **adopt a systems and scientific approach**.

Learn what two physicians, one of whom is the chairperson and chief executive officer of a leading hospital and medical center based in Seattle have to say about this approach in this article.

¹ <https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/AcuteInpatientPPS/FY2018-IPPS-Final-Rule>
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Quadruple Aim (Triple Aim + 1) Framework

Since the coining of the *Triple Aim* term by the Institute for Healthcare Improvement (IHI) in 2008, and later made part of the US national strategy for tackling health care issues and the implementation of Obamacare (2010), healthcare providers continue to struggle with the core tenets of the Triple Aim. The Triple Aim, a framework developed to redesign healthcare into a system without errors, waste, delay and unsustainable costs aimed to optimize health system performance. The goal was to do so by simultaneously focusing on improving the health of a population, while also ensuring superior patient experience and reducing the per capita cost of providing that care.

In 2016, IHI proposed that the Triple Aim be expanded to include physician and healthcare workers' job satisfaction to be effective in achieving the Triple Aim goals. This expanded framework would be termed, the Quadruple Aim or Triple Aim + 1. The reason the expansion was needed was because experts believe that without physicians' and healthcare job satisfaction, achieving the triple aim goals was not possible.



The number of hospitals who were found to be non-compliant with CMS 30-day readmissions requirement standard last year (2017) and therefore penalized (in 2018) because of it is alarmingly high at 46% of the total population of registered hospitals. This high number suggests a symptom that hospitals are far from effectively achieving the Triple Aim goals, let alone the Quadruple Aim. One area often overlooked when improving readmissions or any hospital quality metric is physicians' engagement, satisfaction and burnout rate.

Why should hospitals care about physician burnout?

Medscape reports that 42% of physicians experience burnout on the job in their 2018 study (January 17, 2018)². The same study showed that 33% of burnout physicians are easily exasperated by patients, which affects patient satisfaction, and 14% admitted that their condition leads to errors that they wouldn't ordinarily make, which affects patient and medical safety. Over half of those burnout physicians attribute the cause to excessive bureaucratic and administrative tasks. Medscape is not alone in its findings. Numerous scholarly articles, and medicine and healthcare academia and research agree that physician burnout, associated early retirements and job dissatisfaction are undeniable and on the rise. Tarek Elsayy, MD, FACP, Reliant Medical Group President and CEO urges, "Neglecting to address

² Medscape National Physician Burnout and Depression Report 2018, Peckham, C., January 17, 2018

physician burnout could spell trouble” for hospitals³. “For every percent change that you have on the burnout scale, the likelihood is extremely high that in two years that physician will decrease their FTE or retire,” Elsayw explained.

What can hospitals do to reduce physician burnout while simultaneously reduce readmissions and waste and enable the Triple Aim goals?

Figure A - Example of Lean/Lean Six Sigma Tools



As the original founders of the framework intended, Triple Aim was developed to promote a strategic and deliberate effort to eliminate waste from your hospital. Experts advocate that hospitals apply tested methods and discipline to eliminate chaos. As Corey Lyon⁴, DO, Medical Director of the Family Medicine Center at the University of Colorado suggests, “Chaos in exam rooms are akin to texting while driving.”

What are the tested methods that can reduce chaos, and therefore reduce waste, physician burnout and similarly, readmissions? Combining Lean and Lean Six Sigma with advanced analytics. These are two major distinct disciplines but enormously powerful when applied simultaneously to identify opportunities for improvement, differentiate symptoms from root-causes,

and reduce waste and variance in a hospital’s clinical and non-clinical performance.

Once the healthcare industry acknowledged that “we all make mistakes, even physicians”, quote Dr. David Nash, MD, MBA ⁵, the industry started to look at how other service sectors created lean, efficient and high-performing organizations. This led to the discovery of the Toyota Production System (TPS) principles that were the genesis of Lean and Lean Six Sigma principles. Made popular by Motorola, GE, and Allied Signal, these principles were later successfully applied in the Finance, Banking and Insurance sector, and other service industries. Forty years since the management philosophy was founded in the 70s by Toyota Motor Corporation and since turning Toyota, then a small automotive company, into one of the world’s largest automaker, many hospitals and healthcare providers including Virginia Mason Medical Center, Banner Health, Akron Children’s Hospital, Rhode Island Hospital, Hartford Hospital, Veteran Administration (VA) Hospital Network (various locations across the country) and John Hopkins

³ Addressing quadruple aim, physician burnout key to risk success, Belliveau, J., November 16, 2017, RevCycle Intelligence from <https://revcycleintelligence.com/news/addressing-quadruple-aim-physician-burnout-key-to-risk-success>

⁴ Addressing the main cause of physician burnout, Aldinger, K. MD., February 11, 2018 from <http://medicaleconomics.modernmedicine.com/medical-economics/news/addressing-main-cause-physician-burnout>

⁵ Eliminate waste and reduce variation in your medical practice, Nash, D., MD., December 1, 2012, www.KevinMD.com

All Children's Hospital have all attested to the power of applying Lean and Lean Six Sigma to eliminate wasteful activities (e.g. routine but not medically required procedures and CBC tests). The power of Lean/Lean Six Sigma tools is not constrained to eliminating wasteful activities. Hospitals have shifted and reduce non-value add work away from physicians to lower skilled employees (and therefore increasing physician job satisfaction), reduced patient wait times and variability in wait times and reduced 30-day hospital readmissions.

No silver-bullet

Still, many providers have the misconception that pushing for EHR adoption, implementing technology and/or building new expensive medical campuses will improve patient satisfaction, increase healthcare workers' satisfaction and/or improve efficiency. The truth is, as many have found out, there is no shiny new EHR system, (Telemedicine, AI, or Robotics) technology or building that can mask foundationally broken processes and workflows commonly found in a hospital. Hospitals have to do the hard work to identify the root-causes of the problems that are the cause of high/unacceptable readmission rates, physician burnout, patient dissatisfaction and unacceptable high cost of care. And the way to do so is to apply Lean and/or Lean Six Sigma principles to identify those root-causes and use data to make informed decisions about what practices are working and what are detrimental to achieving the targeted cost of care, reduced readmission rates, reduced physician/healthcare worker burnout, and increased patient satisfaction. As other service sectors like banking and insurers have found in the 90s and the turn of the century, implementing the latest technology is ineffective and will in fact cause great (change) failure, if the core processes and workflows are not also reviewed and redesigned, and jobs, incentive programs and other people and cultural factors are not aligned in tandem to optimize operational efficiencies and deliver superior customer (patient) experience.

Lean / Lean Six Sigma Has Failed

If you have already experimented and/or are already adopting these principles in your hospital but you haven't seen remarkable results, Lean/Lean Six Sigma has not failed you. Most likely it is an organization's failure in execution and/or a change management failure. Tools and principles are only as good as the individuals and groups of individuals applying those principles and tools. Without strategic, proper and/or system-wide execution, your hospital improvement projects would fail miserably.

Physicians and Hospital Administrators Testimonials on Lean/Lean Six Sigma

This article is not intended to discuss the strategies for implementing Lean successfully but take it from this hospital's CEO who has transformed Virginia Mason Medical Center (VMMC) from the brink of bankruptcy to one of the most admired hospitals in the country for patient satisfaction, quality and safety using these principles. Dr. Gary Kaplan, MD is Chairperson and CEO of VMMC. Dr. Kaplan not only stood the notion that Lean Six Sigma is for production of widgets and cars, and not patient safety and care on its head, but he has developed the Virginia Mason Production System entirely on the principles of Lean Management and with it, drastically changed the hospital's culture and led it to become one of the most respected organizations in America's healthcare industry, earning numerous Top US Hospital awards and accolades. Dr. Kaplan himself has received a remarkably high (93%) CEO approval ratings on

glassdoor.com, an organization renowned for its collection of anonymous employee reviews of its employers. So deeply convinced is Dr. Kaplan in the Lean system, he asserts the following⁶,

“A systems approach applies scientific insights to understand the elements that influence health outcomes and alters processes to produce better health at lower cost. A systems approach relies on evidence-based principles to reduce variability by standardizing processes, embedding best practices and driving continuous improvement. This approach would make it a priority to identify and eliminate waste—anything that adds cost but no value—and thereby restrain costs for consumers, providers and insurers.

For example, the process for determining whether an MRI is necessary and appropriate should be the same in Seattle and Bangor, Maine, and everywhere in between. Standardizing processes, where variation adds no value, also minimizes the potential for human error, increasing care quality and patient safety.

I know a systems approach accelerates quality, safety and efficiency based on our experience at Virginia Mason. We adapted engineering principles of the Toyota Production System more than 15 years ago and use them to improve how we serve our patients and support our organization's culture of innovation. Patients often participate alongside Virginia Mason team members in our continuous-improvement workshops. They are our partners as we use our systems engineering approach to design processes based on their ideas and needs.”

“As a nation, we have more knowledge than ever about how to provide appropriate, high-quality care and keep patients safe. There is no legitimate excuse for hesitating to apply this knowledge to make care better, safer and more affordable. Accepting the status quo will yield more of what we have—a healthcare system hobbled by inefficiency, waste, unnecessary variability and, all too often, less than optimal quality and safety.”



“All of us in healthcare have a moral imperative to make care better, faster and more affordable. Using the tools of the Virginia Mason Production System, we are finding that the pathway to higher quality and lower costs is the same.”

Dr. Gary Kaplan MD,
Chairman and CEO
Virginia Mason Medical Center

⁶ Dr. Gary Kaplan on “Systems Approach” to healthcare, Kaplan, Dr. G., MD., Modern Healthcare, April 15, 2017 from <http://www.modernhealthcare.com/article/20170415/MAGAZINE/170419901>

In a separate article reported by Becker's Hospital review in its April 2, 2015 issue, Dr. Paul DeChant⁷ reiterates that Lean/Lean Six Sigma works in the hospital arena. Here's an excerpt of what he stated:

"Lean reduces waste, refocuses priorities on value and serving the patient and reduces burnout for physicians and other care providers in the following seven ways:

1. Allowing physicians more time to directly connect with and care for their patients by reducing the clerical and data-entry burdens of their work. This is particularly important in the exam room where they can focus eye-to-eye on their patient rather than on a keyboard and a monitor screen.
2. Hardwiring quality into work, reducing the risk of error or adverse events and reducing malpractice risk.
3. Improving workflow and reducing patient wait times, meaning the patients are in a better mood when the physician enters the exam room than they would be if they've waited for a long time.
4. Identifying tasks that a non-physician member of the care team can do, thus reducing the total amount of work required of the physician to get through the day.
5. Enabling the physician to complete all of the day's work shortly after the last patient has been seen, thereby allowing them to go home earlier without having to log on to the EHR from home to complete the day's charts, messages and test results.
6. Having physicians work as a member of a team, rather than on their own, enhancing a positive work environment and connection to their co-workers.
7. Providing workers with the opportunity to recommend and implement their own improvement ideas in a structured process that ensures the effectiveness and stability of the improvement.

"People who are overburdened tend to feel disrespected. By improving workflows and reducing waste, Lean strategies help physicians refocus on the healing interaction they have with their patients, which allows physicians to be as effective as possible," said Dr. DeChant."

Conclusion

If you have a sincere and compelling desire to improve your hospital's performance, in terms of achieving the quadruple aim goals, delivering superior patient experience, increasing revenue/reimbursement earnings, quality metrics, and reducing penalties, then you owe it to your population of citizens and patients to consider applying Lean / Lean Six Sigma principles and its management philosophy system-wide. And approach the transformation holistically, in tandem with addressing people, culture and stakeholder engagement factors. Empirical evidence and statistics exist that prove the relevance of these industrial engineering principles and management philosophy to healthcare and the remarkable results it can produce. You must however, set aside cognitive biases, preconceived notions about it and be completely open to embracing the notion fully, or you will fail before even getting out of the gate.

⁷ Eliminate waste and reduce variation in your medical practice, Nash, D., MD., December 1, 2012, www.KevinMD.com